

## **REMARKS**

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

### **I. CLAIM STATUS AND AMENDMENTS**

Claims 1-5, 7, 9-14, 21 and 22 were pending in this application when last examined and stand rejected.

Claim 1 is amended to clarify the claimed invention.

No new matter has been added.

### **II. OBVIOUSNESS REJECTION**

On pages 3-5 of the Office Action, claims 1-5, 7, 9-14, 21 and 22 were rejected under 35 U.S.C. § 103(a) as obvious over Umezawa et al. (WO 02/08766) in view of Ozawa et al. (2001), Hamilton et al. (US 6,780,599), Simpson et al. (2000) and Martoglio et al. (1998).

Applicants respectfully traverse this rejection as applied to the amended claims.

Applicants note that the amended claims are directed towards a method for analyzing whether or not a test protein localizes to an organelle. The method comprises introducing a fusion peptide (a) and a fusion peptide (b). The fusion peptide (a) has an organelle targeting signal peptide while the fusion peptide (b) has a test protein. As noted previously, if the test protein causes the fusion peptide (b) to be localized to the same organelle as the fusion peptide (a), then a fluorescent signal is detectable. Amended claim 1 further clarifies that the test protein and the organelle-targeting signal peptide do not directly interact. Such limitation is not taught or suggested by the prior art.

In particular, it is noted that Umezawa et al. is directed towards protein-protein interaction analysis (please see col. 4 lines 39-44). As shown in Figure 1 of this reference, upon interaction of proteins 4a and 4b, there is intein splicing and the production of a signal. On the other hand, the claimed method does not have comparable protein-protein interactions. Instead, in the claimed method, the inteins are brought close enough to cause intein splicing by their confinement to the organelle. Such is not taught or suggested by this reference. Umezawa et al.

is instead a method of detecting protein-protein interaction and not a method of detecting whether a protein is localized to a particular organelle.

Further, in regard to Ozawa et al., it is noted such reference is also directed towards protein-protein interactions. For instance, in Figures 3 and 4 of this reference, it is shown that the interaction of proteins (a) and (b) bring the accessory proteins in close enough physical proximity to enable reconstitution of a signal. Again, such teachings require the interactions of two proteins to enable reconstitution of a signal. On the other hand, in the claimed invention, it is not the interaction of two proteins which bring the accessory proteins in close enough proximity for signal production but it is rather the physical confines of the organelle which enable intein splicing. Thus, this reference fails to teach each and every element of every claimed invention. Such is also the case in regard to Hamilton et al. The assay of Hamilton et al. requires protein-protein interaction to cause reformation of a fluorescent protein. Such protein-protein interaction fails to render obvious or anticipate the claimed invention as amended claim 1 requires that the organelle-targeted signal and the test protein do not directly interact. Neither Simpson et al. or Martoglio et al. remedy the above-noted deficiencies in the cited references.

Thus, to reiterate, the cited references disclose probes for protein-protein interactions, wherein a signal is emitted only when a protein and another protein directly interact. On the other hand, in the invention of the amended claims, there is no direct interaction between such proteins but instead the signal is reconstituted because of the close proximity of fusion peptide (a) and (b) within the organelle. Applicants respectfully suggest that bringing two fusion constructs into close enough proximity to enable intein splicing and a reconstituted signal without a protein-protein interaction but instead by confining such constructs to an organelle is not taught or suggested by the cited art. Thus, for the above-noted reasons, this rejection is untenable and should be withdrawn.

**CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and early notice to that effect is hereby requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact the undersigned attorney at the telephone number below.

Respectfully submitted,

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